



1001 Main Street, Fortuna, CA 95540-2008 Phone: 707-725-9000 Fax: 707-725-9060

E-mail: ccraneco@aol.com Website: ccrane.com

June 13, 2002

To: The Federal Communications Commission

We suggest that any implementation of AM IBOC Hybrid be postponed until full analysis of skywave propagation interference, especially to clear channel stations, be closely analyzed and unanswered questions can be answered.

We suggest that iBiquity include in the subjective measurements, human opinion while listening to the degradation of the analog audio at 5 kHz verses 10 kHz and observed on the same scale as have been made regarding "improvements" to the AM IBOC hybrid digital sound quality. These tests must be made with music, news, talk, etc.

As you are aware, the current tests were performed using MPEG-2 AAC audio coding algorithm. The final implementation of IBOC will use the Lucent technology patented P.A.C. audio algorithm, which has not been tested with this system. One of the main benefits of digital radio is increased audio quality. If the final system that will be used is Lucent's PAC algorithm, full testing should be accomplished with this algorithm. We suggest that the AM IBOC implementation be postponed until further test data and subjective listening tests are performed using the final algorithm.

We suggest that more portable receivers be tested and iBiquity compile a list of the receivers that have adjacent channel interference problems or inadequate filtering. This is imperative because the AM broadcast bandwidth will be modified; whereas the FM broadcast bandwidth remains unchanged. Many portable receivers have bandwidths that exceed 6.5kHz and will be adversely affected by IBOC hybrid signal.

While it is true that many receiver manufacturers use very narrow filters, (as narrow as 3kHz) all receivers should not be characterized as performing this poorly. Reducing the broadcast bandwidth to 5kHz will in effect "force" every receiver to have this poor analog bandwidth and all receiver manufacturers will be forced to install narrow bandwidth analog filters.

The only people who will initially be able to receive the IBOC Hybrid system are in large cities. It is essential to determine how many listeners are nighttime, skywave and clear channel listeners to determine the amount of interference they will receive with the hybrid system. We are requesting that iBiquity fully analyze the potential of skywave first (and second where applicable) adjacent channel interference for numerous receivers and in various situations, especially in rural locations where several adjacent skywave stations are present.

At the current 1mV/m contour level required by AM IBOC hybrid, the current service area cannot possibly match analog coverage of even a moderate portable receiver, not to mention a good receiver with a moderate antenna which would receive a signal out to 100uV or less contour area. The data we have suggests the geographical coverage offered by IBOC will be 1/40th the coverage of the existing analog signal. This will compromise the current structure of AM broadcast bandwidth and audio quality and will only benefit people in and around major cities.

While FM IBOC seems to be going well, the latest information suggests AM IBOC will be recommended for daytime use only by the NRSC. This leaves the IBOC's business plan without a disclosed final direction or destination.

We are in a free market economy and consumers are not asking for this service. Millions of listeners will lose their choice of radio if full or partial conversion is achieved. The 500 to 2000 microvolts signal needed to achieve digital radio will leave them with degraded audio and potential interference from the hybrid adjacent channels. A country as big as the US must have a "no cost" media capable of spanning great distances. If history is representative of what the future holds, the last major improvement to the AM broadcast band suffered a major defeat with the introduction of AM Stereo. AM radio format is news, sports, talk and suitable audio quality for those formats is sufficient with the current structure. Talk Radio is now the number one format in the United States.

Portable IBOC receivers are not possible at this point because the processor needed to decode IBOC currently consumes too much power and a portable radio cannot be manufactured. Portable radios are one of the most common electronic appliances in the United States. This is a big problem until technology and manufacturing techniques allow this to be viable. Thirteen micron or smaller ASIC or FPGA chipset would be required to make this possible.

Our country's AM broadcast system has served us well. Any new system that is to serve us as well or better should not be implemented while still a work in progress.

Sincerely,

Robert C. Crane,
President, C. Crane Company, Inc.

Chris Justice
Chief Engineer, C. Crane Company, Inc.